

CLAIMS:

1. A delivery system for a composition, the system comprising a container, the container comprising:

an outer housing having a first chamber;

5 a first mass of a first component of the composition, the first mass received in the first chamber, wherein the first component is a liquid;

an inner housing received in the first chamber at a first position such that an interference fit exists between the outer housing and the inner housing such that the inner housing seals the first mass within the first chamber, the inner housing having a second chamber, the inner housing having an aperture in a side wall of the second chamber, and the second chamber having a bottom wall and a side wall;

10 a second mass of a second component of the composition, the second mass received in the second chamber, and the second mass conforming to the bottom wall and the side wall; and

15 a first seal which seals the second mass within the second chamber.

2. The delivery system of claim 1 wherein the container further comprises a stop member disposed on the outer housing wherein contact between the inner housing and the stop member occurs at the first position.

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3. The delivery system of claim 2 wherein the stop member is an annular rib.

4. The delivery system of claim 1 wherein the seal is a foil seal.

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5. The delivery system of claim 1 in which the outer housing further comprises an outer skirt surrounding the first chamber.

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6. The delivery system of claim 5 wherein the skirt has a first girth dimension at a top section thereof, the skirt has a second girth dimension at a bottom section thereof, and the skirt has a third girth dimension at a section intermediate the top section and the bottom

section, wherein the third girth dimension is less than the first girth dimension and the third girth dimension is less than the second girth dimension.

7. The delivery system of claim 1 wherein the container further comprises:

5 a depression in an outer wall of the inner housing proximate the aperture; and  
a second seal positioned within the depression intermediate the aperture and the outer housing.

8. The delivery system of claim 7 wherein the depression has a first depth at a top  
10 section thereof and a second depth at a bottom section thereof, wherein the first depth is less than the second depth.

9. The delivery system of claim 7 wherein the second seal is an o-ring.

15 10. The delivery system of claim 7 wherein the outer housing further comprises a ramp.

11. The delivery system of claim 1 wherein a wall of the first chamber is flexible.

20 12. The delivery system of claim 1 wherein a wall of the second chamber is flexible.

13. The delivery system of claim 1 wherein the second component is a liquid.

14. The delivery system of claim 1 wherein the second component is a solid.

25 15. The delivery system of claim 1 wherein the inner housing is a cylinder and wherein the aperture is symmetrical about a radius of the cylinder.

30 16. The delivery system of claim 1 further comprising an applicator, the applicator comprising:

an elongated body having a first end and a second end, the body having a first girth dimension;

an applicator tip at the first end of the body; and

a projection having a widest point positioned intermediate the first end and the second end, the projection having a second girth dimension at the widest point greater than the first girth dimension.

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17. The delivery system of claim 16 wherein each girth dimension is a circumference.

10 18. The delivery system of claim 16 wherein the second chamber has a first length dimension and wherein a distance from the first end of the elongated body to the widest point of the projection is less than or equal to the first length dimension.

15 19. The delivery system of claim 16 wherein the inner housing has an inner diameter and wherein the second girth dimension is less than the inner diameter.

20. The delivery system of claim 16 wherein the applicator tip is a brush.

21. The delivery system of claim 1 further comprising an applicator, the applicator comprising:

20 an elongated body having a first end and a second end;

a head at the first end of the body, the head having a first end and a second end, the second end of the head being proximate the first end of the body, the head having a larger girth dimension proximate its second end and a smaller girth dimension proximate its first end; and

25 a tip at the first end of the head.

22. The delivery system of claim 21 wherein the applicator further comprises:

a shoulder disposed at an interface between the body and the head.

30 23. The delivery system of claim 22 wherein the applicator further comprises:

a stop member disposed on the elongated body, a distance from the shoulder to the stop member being approximately equal to a distance between an upper surface of the inner housing and a upper surface of the outer housing when the inner housing is fully inserted into the first chamber of the outer housing.

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24. The delivery system of claim 21 wherein the applicator further comprises:  
a plurality of brush elements disposed on the tip.
  
25. The delivery system of claim 21 wherein the body is hollow and the head  
comprises an air vent disposed thereon.
  
26. The delivery system of claim 1 wherein the first seal further seals the first mass  
within the first chamber.
  
- 15 27. The delivery system of claim 1 wherein the inner housing includes a plurality of  
apertures in the side wall of the second chamber, the apertures being equally spaced about  
a periphery of the side wall.
  
- 20 28. The delivery system of claim 1 wherein the delivery system is used in a dental  
procedure.
  
29. The delivery system of claim 1 wherein the composition is hardenable.
  
30. A method of assembling a composition container comprising:  
25 providing an outer housing having a first chamber;  
at least partially filling the first chamber with a first mass of a first component of  
the composition, wherein the first component is a liquid;  
inserting an inner housing into the first chamber until the inner housing is at a first  
position, wherein an interference fit exists between the outer housing and  
30 the inner housing such that the inner housing seals the first mass within the  
first chamber, the inner housing having a second chamber, the second

chamber having a bottom wall and a side wall, and the inner housing having an aperture in a side wall of the second chamber;

at least partially filling the second chamber with a second mass of a second component of the composition, the second mass conforming to the bottom wall and the side wall; and

sealing the second mass within the second chamber.

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31. The method of claim 30 wherein the outer housing further comprises a stop member and wherein the step of inserting the inner housing into the first chamber includes sliding the inner housing into the first chamber until the inner housing contacts the stop member.

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32. The method of claim 30 wherein the inner housing further comprises a depression in an outer wall of the inner housing proximate the aperture, the method further comprising:

positioning a seal within the depression prior to inserting the inner housing into the first chamber in a first direction.

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33. The method of claim 32 further comprising pulling back on the inner housing in a second direction opposite the first direction to seat the seal intermediate the aperture and the outer housing.

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34. The method of claim 32 wherein the outer housing further comprises a ramp member, wherein the inner housing contacts the ramp member at the first position, and wherein the ramp member causes the inner housing to move in a second direction opposite the first direction to seat the seal intermediate the aperture and the outer housing.

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35. The method of claim 30 wherein the step of sealing the second mass within the second chamber further includes sealing the first mass within the first chamber.

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36. A method of providing a composition comprising:

providing a container, the container comprising:  
an outer housing having a first chamber;  
a first mass of a first component of the composition, the first mass received  
in the first chamber, wherein the first component is a liquid;

5 an inner housing received in the first chamber, the inner housing having a  
second chamber, the second chamber having a bottom wall and a  
side wall, and the inner housing having an aperture in a side wall of  
the second chamber;

10 a second mass of a second component of the composition, the second mass  
received in the second chamber, the second mass conforming to the  
bottom wall and the side wall; and

a seal which seals the second mass within the second chamber;  
breaking the seal; and

15 providing a force on the inner housing, thereby pushing the inner housing into the  
outer housing, wherein a pressure caused by the force forces the first mass  
through the aperture and into the second chamber to mix with the second  
mass to form the composition.

37. The method of claim 36 wherein the step of providing a force includes pushing  
20 downward on an applicator.

38. The method of claim 36 wherein the step of breaking the seal includes pushing  
downward on the seal with the applicator.

25 39. The method of claim 38 wherein the applicator comprises a projection and wherein  
the projection pushes broken parts of the seal toward an inner wall of the inner housing.

40. The method of claim 37 further comprising:  
agitating the composition with the applicator to further mix the first mass and the  
30 second mass.

41. The method of claim 36 wherein substantially all of the first mass enters the second chamber.

42. The method of claim 36 wherein the inner housing seals the first mass within the  
5 first chamber.

43. A delivery system comprising:

a container having a seal which is breakable using manual force along an axis  
substantially perpendicular to an orientation of the seal; and

10 an applicator, the applicator comprising:

a elongated body having a first end and a second end, the body having a  
first girth dimension;

an applicator tip at the first end of the body; and

15 a projection positioned intermediate the first end and the second end, the  
projection having a second girth dimension greater than the first  
girth dimension;

wherein force applied against the seal by the applicator tip along the axis is  
sufficient to break the seal, resulting in broken seal fragments, and wherein  
insertion of the applicator into the container causes the projection to contact  
20 the broken seal fragments, thereby pushing the broken seal fragments away  
from the axis.

44. The delivery system of claim 43 wherein each girth dimension is a circumference.

25 45. The delivery system of claim 43 wherein the applicator tip is a brush.